2013

Western Research Farm Summary

Western Iowa Experimental Farm Association

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Western Iowa Experimental Farm Association
Founded 1946

Officers

Chairperson ..... Kyle Bohnker, Charter Oak
Vice Chairperson ..... Linda Herman, Pisgah
Secretary-Treasurer ..... Richard Pope, Logan

Directors

Aaron Gress ..... Crawford County
Kyle Bohnker ..... Crawford County
Linda Herman ..... Harrison County
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Keith Zediker ..... Monona County
James Else ..... Monona County
Lloyd Henderson ..... Woodbury County
James Brown ..... Woodbury County
Gary Guge ..... At large

Western Research Farm

Wayne Roush ..... Superintendent

Mark Honeyman ..... Coordinator, Research Farms
Tim Goode ..... Manager, Research Farms

103 Curtiss Hall, ISU
Ames, IA 50011

Farm Summary

Wayne Roush, farm superintendent

Farm Comments

Developments. A minimum of equipment changes occurred during 2013. A small spot sprayer, a new gooseneck hitch for the pick-up and a used John Deere hi-boy sprayer were the only additions. The hi-boy is shared with another ISU farm.

Numerous farm and building maintenance activities occurred. A new automated weather station for the Iowa Mesonet system was installed and is scheduled to be on-line in 2014. It will supply real-time weather data that is accessible to the public. Two of the three existing large swine hoops had all the wall posts replaced as well as replacement of the tarp covers, doors, and end panels. In addition, all three large hoops had center dividers added to make them into two pens each, and the old feeders were replaced with six new ones. Construction on a new machinery storage hoop was started in the fall. Some dirt work in fields, removal of volunteer trees, and old fence helped to consolidate various fields. General clean-up, scrap iron sales, and new pasture border fence installation occurred.

Field days and tours. Seven events were held during the year with a total of 226 people attending. The annual meeting was postponed for one week due to weather concerns. The Manure Applicator Certification Training also had to be postponed and was later held at the Extension office. Fifteen producers attended the ISU FARM trials participant meeting. The participant meeting covers all trials statewide, with an emphasis on the local ones. Participants see how their trials/ideas mesh with others and get a chance to interact with ISU crops personnel.

Lee Burris, ISU professor, and his soils class attended a 3-hour educational farm field day tour to view various soils in western Iowa and discuss their uses and properties.

The farm hosted Matt Hill, ISU associate professor, anthropology, and 11 of his students for an archeological dig located near Ute, Iowa. This dig was perhaps the most notable event of the year. Matt Hill and his students camped at the farm and had full access to kitchen, bathroom facilities, and meeting room during their stay from May 8 through June 7. The farm provided learning opportunities to two different school groups at the dig site and assisted in an open house at the site. The farm association's Board of Directors had a private tour of the dig site and then returned to the farm for grilled fresh Berkshire pork chops, which were produced at the farm.

New projects. Only one new project was started on-site in 2013, Optimum Soybean Planting Date comparison. Most new project developments were under the ISU FARM banner, which completed 23 trials in 2013. (See article elsewhere in this report.)

Livestock. With the addition of ISU FARM trials to Western's research mix, livestock production has been rearranged to more closely match the available labor. Livestock production at the farm will focus on research-based trials. Livestock production in 2013 included a group of 12 steers that were pastured during the summer and then shipped to another farm for finishing. These steers were part of the McNay Research Farm cattle breeding trial. Any extra pastures were either mowed for hay or sold as standing forage. Portions of the cattle finishing facilities were rented, either to house weanling calves or to a starting farmer to finish cattle.

Swine production consisted of 107 head finished during the year. Seventy-two of these were a continuation of the purebred Berkshire pig feeding trials started in 2011. This intensive trial will define growth curves, feed intake, fat deposition, and lean gain in purebred Berkshire pigs. Berkshire pigs are in demand for export niche markets. These pigs are weighed and ultra-sounded every 21 days for muscle and fat deposition from a starting weight of 50 lb to a market weight of 280 lb.

Thirty-five head of swine were fed out in support of the Monona County Fair special 4-H swine project. The project was designed to assist 4-H members who have an interest in swine, but have no access to swine facilities. Participants in the project spent an afternoon at the farm once every other week during the feeding period and learned about swine production, animal care, and livestock showmanship. The 11 participants paid for their pigs and all inputs and then showed at the county fair.

Crop Season Comments

Corn planting started on May 12 and was completed on May 15. Harvest started on November 2 and was completed November 3, with an average yield of 220.5 bushels/acre. Soybeans were planted between May 1 and May 14. Soybean harvest started October 27 and was completed on October 28, with an average yield of 56.3 bushels/acre.

Respectively, these corn and soybean yields were 22.7 percent and 4.5 percent above five-year farm averages. Alfalfa yields averaged 5.8 tons/acre with three cuttings harvested and were 1.01 ton/acre above the five-year farm average.

Following the record drought of 2012, plant-available soil moisture reserves were very low going into the spring of 2013 and drought was a real concern for the growing season. Early spring soil moisture surveys showed that soil moisture was essentially confined to the top 1-ft level in the soil profile, enough moisture to get a crop up but not enough to sustain it for the season. Both April and May of 2013 were the wettest on record and alleviated this concern. The rains did however lead to considerable planting delays. The rain-delayed planting and a cooler-than-normal spring caused very slow crop development. The rains essentially stopped by mid-June, and by August most crops were showing signs of drought stress. Some parts of western Iowa actually recorded less rainfall in 2013 than during the record drought of 2012. Summer rainfall across western Iowa was very sporadic, tended to be quite localized, and highly variable. Crop yields reflected this in their widespread variability as well. A period of unusually cool temperatures from mid-June through mid-August, combined with some very timely localized rains in August and September, proved to be crucial for crop yields at the research farm. Both the corn and soybean yields were above average. However, the corn and soybean harvests were delayed to allow for some additional field dry-down. (For a more complete growing season summary see article elsewhere in this report.)

Acknowledgements

We would like to thank all members, sustaining members, and donors who support the Western Research and Demonstration Farm through donations of time, money, and products. Their support has made many of this year's trials possible.

Sustaining Members

Community Bank, Dunlap
First State Bank, Mapleton
Sloan State Bank, Sloan and Whiting
Iowa-Nebraska State Bank, S. Sioux City
Valley Bank, Mapleton and Danbury
Western Iowa Power Cooperative
The Soil and Water Conservation Districts of:
Crawford County
Harrison County
Monona County
Woodbury County

Donors

Berne Coop, Ute
Bomgaars, Mapleton
LG Seeds, Brad Hanson
Mapleton Press, Mapleton
Renze Seeds, Dennis Boyle

Research Farm Projects

Project	Project Leader
Lean and fat deposition measurements for purebred Berkshire pigs housed in hoop barns in Iowa	J. Mabry/M. Swantek/ M. Honeyman/D. Stender
Feed intake and growth rate in purebred Berkshire pigs housed in hoop buildings in Iowa	J. Mabry/M. Swantek/ M. Honeyman/D. Stender
Dominant grass effects on diversity and functioning of restored grasslands	B. Wilsey
Effects of biochar and manure applications to prairie establishment	L. Biederman
Soil moisture survey	J. DeJong
National Phenology network study	M. Schwartz
Native cover crops: effects on prairie establishment and weed invasion	B. Wilsey
Optimum soybean planting date comparison	W. Roush
Plant species effects on diversity and weed invasion resistance in restored grasslands	B. Wilsey
Archeological dig overview	M. Hill

Project (continued)

U.S. Weather Service weather station
- Air temps; hi, lo, current
- Soil temps; 1, 2, 8, 20, 40 inch
- Evaporation dish
- Daily precipitation
- Severe weather spotter

Demonstrations:
- Manure settlement basin
- Composting livestock mortalities
- Composting hoop buildings manure pack
- Swine finishing in hoop buildings